U.S. Naval Test Pilot School Command Brief

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USNTPS 46th Commanding Officer

NAVAIR

In the beginning…

“The best dividends on the labor invested have invariably come from seeking more knowledge rather than more power.”

- Wilbur and Orville Wright, 12 March, 1906

46th Commanding Officer's Mission Statement

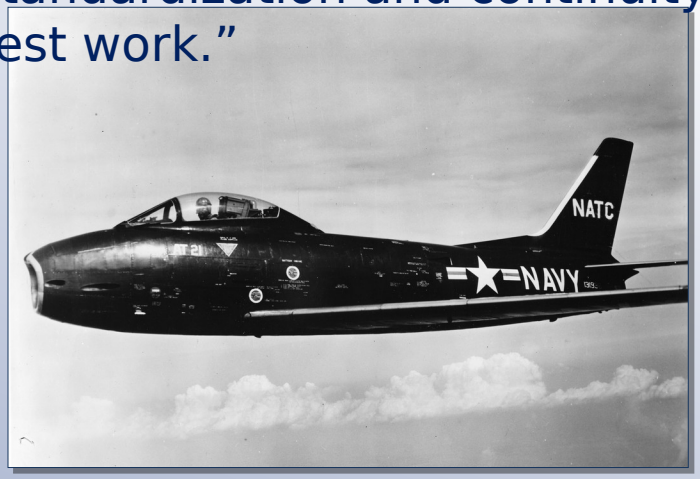
"The U.S. Naval Test Pilot School trains and educates Developmental Test pilots, flight officers, and engineers in the design, execution, communication, and risk management of aircraft and systems testing in order to provide graduates prepared to lead aviation test projects in support of acquisition decisions and the advancement of fleet warfighting capabilities."

History

Training/Education Need

"…to fill a broad technical gap between flight training and test work…"

"…to maintain accuracy, standardization and continuity in test work."



Milestones

USNTPS Established	1945
Rotary Wing Syllabus	1961
11 Month Syllabus	1973
Airborne Systems Syllabus	1975
First Female Graduate	1982
Short Course Department	1997

Partnerships

U.S. Naval Test Pilot School (USNTPS)

- Established 1945, NAS Patuxent River, MD
- FW, RW, and SYS curricula
- (2) Classes / year
- (1) UK, (1) USA, and (1) USAF staff instructor
- (1) UK exchange student / year
- (2) USAF exchange students / year

U.S. Air Force Test Pilot School (USAFTPS)

- Established 1944, Wright-Patterson AFB, OH
- 1951, moved to Edwards AFB, CA
- FW only curriculum
- (2) Classes / year
- (1) USN staff instructor
- (1) USN and (1) USMC exchange students / year

Empire Test Pilots' School (ETPS)

- Established 1943, Boscombe Down, UK
- FW and RW curricula
- (1) Class / year
- (1) USN staff instructor
- (1) USN exchange student in each class

École du Personnel Navigant d'Essais et de Réception (EPNER)

- Established 1946, Brétigny-sur-Orge, FR
- 1962, moved to Istres Le Tube AB, FR
- FW and RW curricula
- (1) Class / year
- (1) USN exchange student every 3 years

Command Profile

Total USNTPS Command Personnel: 326 (As of Jul 2015)

Leadership:
- CO / XO / TD / CSC
- CFI / CAI / SCIs

Academic Instructors: 11

Flight Instructors: 34
- (20) Military
  - 13 USN, 3 USMC, 2 USA, 1 USAF, 1 UK
- (7) Civil Service
- (7) Contractor

Administrative Staff: 17
- (2) Operations
- (3) Budget
- (6) Admin / Protocol / Facilities
- (6) Simulator Lab / Instrumentation / IT

Maintenance: 196
- (18) Active Duty (GQA)
- (2) Civil Service
- (176) Contractor
  - Dyncorp / Vector / L-3 / Boeing / PAE / Calspan

Long course students: 72 (capacity)

Short course students: ~200 / year

Sorties: ~4,000 / year

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Student Profile

USNTPS Maximum Annual Capacity:

- (72) students (~33-36 per class)
  - (15) Fixed-wing students
  - (12) Rotary-wing students
  - (9) Airborne Systems students

USNTPS Annual Student Composition:

- (42) USN/USMC (33 USN / 9 USMC)
- (9) USA
- (2) USAF
- (~8-14) International
- (4) US Engineers

>4,000 Total Graduates in 70 Years:

- 354 USA
- 390 International

International Partners:

- Canadian Forces
- Finnish Air Force
- French Navy/Air Force
- German Air Force
- Indian Navy/Air Force
- Israeli Air Force
- Italian Air Force
- Japan
- Royal Air Force
- Royal Australian Air Force
- Royal Australian Navy
- Royal Navy
- Royal Netherlands Air Force
- Royal Norwegian Air Force
- Royal Swedish Air Force
- Singapore Air Force
- Spanish Air Force
- Swiss Air Force

Long Course

Two Classes Annually

Three Syllabi

- Fixed Wing (pilot/engineer)
- Rotary Wing (pilot/engineer)
- Airborne Systems (NFO/engineer)

11 Months in Duration

- Pre-arrival training
  - T-6B – Whiting Field, FL
  - T-38C – Randolph AFB, TX
  - H-72 – Grand Prairie, TX
  - H-60 – Ft Indian Town Gap, PA
- Academic hours: (530)
- Sorties / Flight hours: (~100 / 120)
- Technical reports: (25)

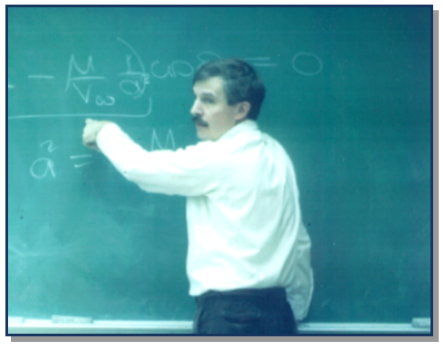
**** USNTPS has only Rotary-Wing syllabus in the U.S. ****
**** USNTPS has the only Airborne Systems curriculum in the *world* ****

Instructional Philosophy

Ground / Theory

- Classroom
  - Mathematics
  - Engineering
  - Aircraft performance
  - Aircraft stability and control
  - Aerodynamics
  - Thermodynamics
  - Electro-optics
  - RADAR theory
  - Advanced topics
- Lab and simulation
- Exercise brief
- Flight demonstration
- Exercise and data flights
- Technical report
- Review and debrief

Flight / Application



Qualitative Evaluation Platforms

Final Exercise

Capstone Project: Developmental Test/Evaluation Phase IIA (“DT-II”)

- Unfamiliar aircraft/systems, Combines all elements learned in curriculum
- Test planning/ Executive Review Board: (1) Week (100+ page test plan)
- Execution: Travel, Ground test, (4) Flights/ (6.0) Hours
- Data Analysis/ Reporting: (9) Days (150+ page technical r

Short Course Department

Condensed/tailored training

- (~200) students / year
- (8-10) courses annually
- Two week duration
  - Academics
  - Flight and simulator events

Current course catalog:

- Intro to Flight Test
- Intro to Airborne Systems
- Rotary Wing Flight Qualities and Performance
- Intro to UAS Test and Evaluation

Specialized courses delivered to:

- China Lake and Pt. Mugu
- Lockheed-Martin
- Finland / Spain

“FLYING LABORATORIES”

Fixed-Wing Syllabus Platforms

(10) T-38C Talon

- USN aircraft
- Primary FW student trainer (NATOPS qual)
- ~1100 hrs / year
- Flying Qualities and Performance
- Transonic / Supersonic Evaluation

(6) T-6B Texan-II

- USN aircraft
- Primary FW student trainer (NATOPS qual)
- ~1000 hrs / year
- Flying Qualities and Performance
- Flight Test Technique Demonstration
- Out-Of-Control Flight / Spin Evaluation

(1) NU-1B Otter / (2) U-6A Beaver

- USN aircraft
- ~250hrs / year
- Lateral-Directional Flying Qualities
- Qualitative Evaluation
- Glider Tow (U-6A)

(2) X-26A Frigate Glider

- USN aircraft
- ~40 hrs / year
- High Lift/Drag Evaluation
- Un-powered Flying Qualities
- Aerobatics

Rotary-Wing Syllabus Platforms

(4) H-60L / (1) H-60A Blackhawk

- USA aircraft
- Primary RW student trainer (NATOPS qual)
- ~900 hrs / year
- Flying Qualities and Performance
- High Altitude Performance

(4) OH-58C Kiowa Warrior

- USA aircraft
- ~500 hrs / year
- Flying Qualities and Performance
- Auto-rotational Landing Evaluation
- Height-Velocity Demonstration

(5) H-72 Lakota

- USN aircraft
- Primary RW student trainer (NATOPS qual)
- ~1000 hrs / year
- Highly augmented flight controls
- Flying Qualities and Performance

(3) C-12C Huron

- USA aircraft
- ~500 hrs / year
- FW, RW, and SYS trainer
- Multi-Engine Flying Characteristics
- Asymmetric Power Demonstration
- Navigation Systems Evaluation

Airborne Systems Syllabus Platforms

(3) F/A-18F Super Hornet

- USN aircraft
- Primary SYS trainer, FW/RW demos
- ~300 hrs / year
- APG-73 radar / ATFLIR
- A/A Radar Evaluation
- A/G Weapons Delivery Evaluation
- AFCS Demonstration
- High AOA / Departure Demonstration

(1) X-8M / (1) Aero-M UAS

- USNTPS aircraft
- FW/RW/SYS training asset
- ~25 hrs / year
- UAS Evaluation
- Navigation System Evaluation

(1) Airborne Systems Training And Research Support – II (ASTARS-II)

- Contracted Saab-340A aircraft / GFE integrated sensors
- Primary SYS trainer, FW/RW demos – “Flying Classroom”
- 375 hrs / year
- APG-68 radar / MX-15 FLIR / AIS / LTN-92 INS / HUD
- Integrated Systems Evaluation
- A/G Radar Evaluation
- A/A Radar Evaluation
- FLIR Evaluation

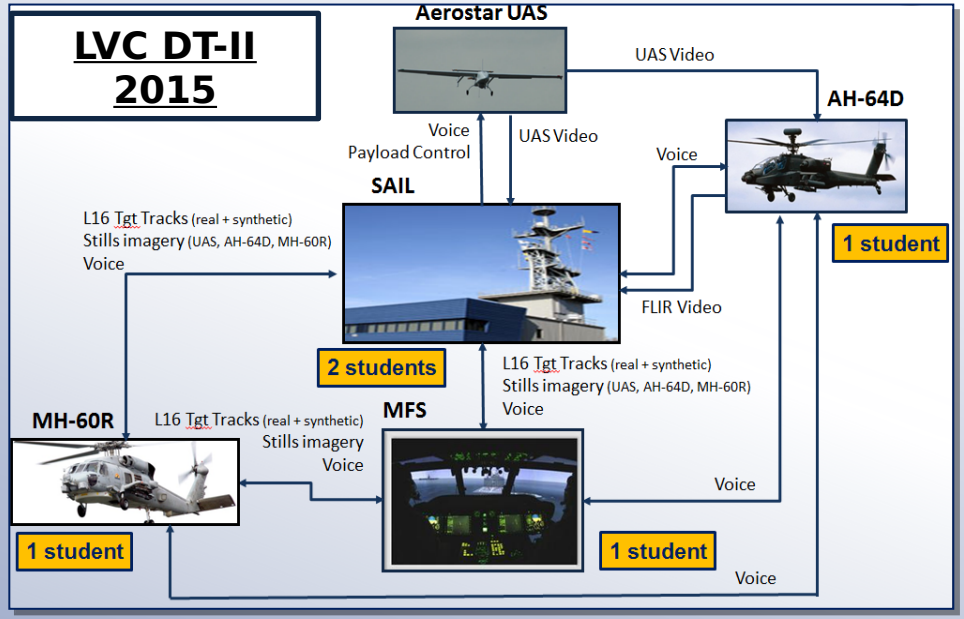
Emerging Capabilities

Academics / Doctrine:

- Unmanned Aerial Systems
- "System-of-Systems"
- Live-Virtual-Constructive
- Cyber classes
- Ethics training
- Leadership lecture series

Training Aids:

- ASTARS-III
  - Organic C-26 host platform
  - AESA radar
  - HD EO/IR sensor
  - Datalink / Ground Station
  - Open Architecture (OA) / Future Airborne Capabilities Environment (FACE)
- H-60 Variable-Stability System
- Organic UAS aircraft
- C-12C → C-12R
- H-58 → H-67
- Simulator Air-to-air model
- Systems Tool Kit (STK) / Next Generation Threat System



Questions